

The Quiet Boundary

BY MIKE DAVIS

Nearly 180 years after U.S. Deputy Surveyor Eleazer P. Kendrick placed mile post monuments on the Indiana-Michigan border, surveyors from both states are busily searching for the historic mile posts.

Their investigations, done almost entirely on their own time, have taken them across hilly grasslands and into woodlands, marshes, swamps, streams and lakes—similar to the conditions Kendrick experienced in October 1827 when he moved east from the Lake Michigan shoreline to set 105 mile posts in about 22 days, completing his task at the northeast corner of Indiana.

Dedicated voluntary committee continues search to re-establish Indiana-Michigan border.

Driving the current project is a growing demand from surveyors who are encountering problems in properly defining the state line for the developers and landowners who are their clients. Surveyors have shown a great interest in recovering and preserving the mile posts to avoid surrendering control of



the effort to state legislatures and their committees or federal authorities who are not as knowledgeable of local records.

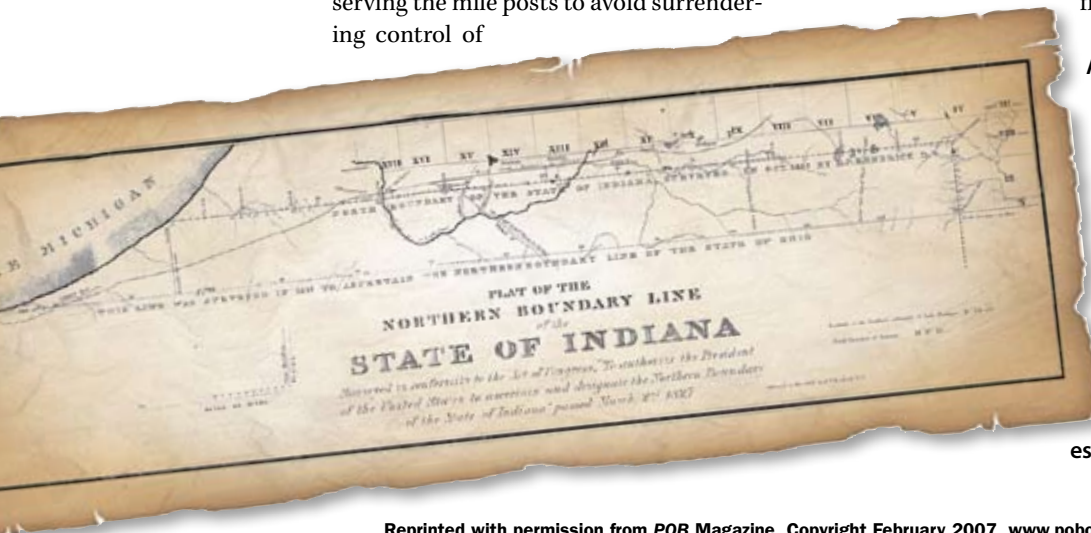
“As long as local surveyors can recover existing evidence of the original mile posts, we can preserve them,” says Norman Caldwell, PS, of Owosso, Mich. Caldwell, a Michigan surveying historian, is a recording secretary of the Indiana-Michigan State Line Committee formed in the fall of 2004.

The problem of properly defining the state line’s location developed soon after Kendrick completed his survey, when rectangular Public Land Survey Systems of Michigan and Indiana were extended to a closure on the Kendrick line. As original subdividing surveyors came to wooded areas with blazed trees or other markings of the Kendrick survey, they would report that they had intersected the state line and set a closing corner. In the open prairie lands, however, the line would not have been as clearly visible.

The subdividing U.S. deputy surveyors, however, were not required to retrace the Kendrick line to confirm the position of the line. As a result,

Above: The Indiana-Michigan State Line Committee members stand proudly in the field: Rex Pranger, Brian Reynolds, Edward R. Reed, Donald Andrews, Glen Richard and Jack Owens.

Left: This copy of U.S. Deputy Surveyor Eleazer P. Kendrick’s 1827 survey map provided the framework for the voluntary committee to investigate woodlands, marshes, swamps, streams and lakes in an effort to re-establish the Indiana-Michigan border.



On Dec. 7, 2006, the committee deemed this large white chisel-shaped stone's location as a "possible Mile Post 86."

Below: A copy of the 1827 report by Surveyor General Edward Tiffin to George Graham, commissioner of the General Land Office, regarding the survey of the northern boundary of the state of Indiana.

over the ensuing years, more and more closing corners were used as terminations of the rectangular survey lines coming in from both states, producing errors of unknown but normally small dimension.

Kendrick's survey showed little of the "wiggles and wobbles" to be found in magnetic compass lines elsewhere. He did wander from the parallel of latitude that is mapped as North 41 degrees, 47 minutes, 43 seconds, but his work appears to be better than other east-west compass lines of the time period.

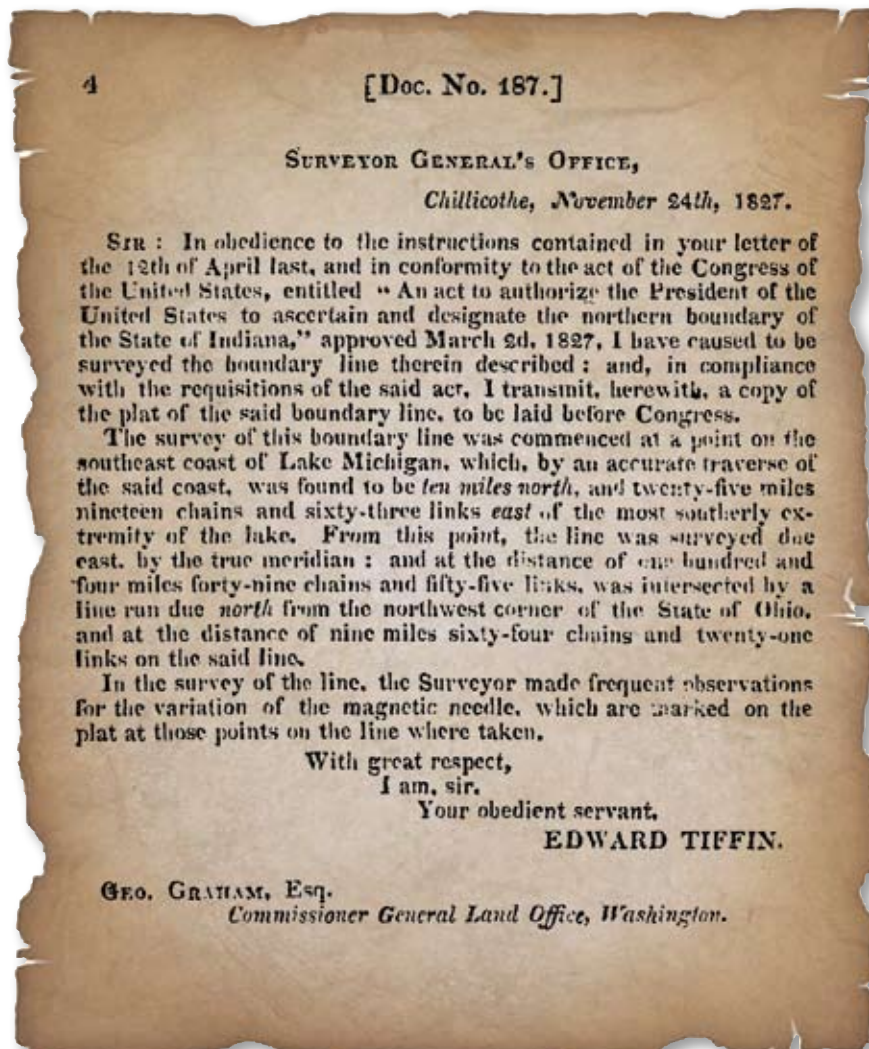
The original survey was authorized by Congress on March 2, 1827, "to ascertain and designate the Northern Boundary of the state of Indiana." The month of October proved to be the best time for the survey, Caldwell says. "Early in the spring, it would have been too wet. Later in the fall, there would have been snow."

It couldn't have been an easy job, though. The surveyors worked in a wilderness filled with rivers and large lakes—along with mosquitoes, snakes and disease. "In the 1820s, civilization had not reached that area," Caldwell says. "Farmers hadn't cleared the land and their hogs hadn't cleared the area of rattlesnakes."

Nevertheless, the crew's work—especially that of the chainmen—is consistent and impressive. Caldwell said the overall length of the line of record is 104.619 miles, and measured by GPS it is 104.276 miles, a difference of 1,811 feet. This calculates to a shortage of about 17.5 feet per mile, assuming that the shoreline of Lake Michigan is still relatively in the same location. A committee report in 2005 includes the comment, "Damn, Kendrick's chainmen were GOOD!"

A Committee Formed

The Kendrick 1827 survey map and field notes provided the framework for the committee, which first met in October 2004. It elected Jack Owens, PS, a retired surveyor from Flint, Mich., as general chairman in recognition of his research



capabilities and project interest. John McNamara, PLS, of South Bend, Ind., was selected to represent Indiana surveyors, and Wayne Mostrom, PS, of Centreville, Mich., was chosen as the

Michigan County Surveyor representative. Also, in true committee organization form, Caldwell was "immediately and unanimously railroaded into being secretary," he reports.



This map shows the swampy location of Mile Post 52 to the right of Indiana Lake.

Currently, there are 29 professional surveyors representing Indiana and Michigan on the committee mailing list. McNamara, who had a copy of the original Kendrick survey notes, meticulously transcribed the document—and translated Kendrick’s penmanship—to provide guidance.

Footsteps to Follow

By September 2005, the committee had decided to focus on recovering and preserving 13 specific mile posts at locations ranging from 2 to 105 miles. (Mile post 105 was set by Kendrick when he overran the extension of the Ohio-Indiana line.) These select mile markers were moved to the top of the research list because they were in woodlands, marshes or swamps where soils and evidence were most likely to have remained undisturbed, or not plowed by farmers or reshaped by bulldozers.

“Some segments way on the west end are probably about the same now as they were (for Kendrick’s survey),” Caldwell says. “After crossing the freeway, there are six or seven miles of very rough country that’s swampy and wet. It’s probably quite close to what they had to deal with.”

Some of the best evidence, he said, was provided by county surveyors in the mid- to late-1800s. “We are fortunate to have had county surveyors who kept good records that continue to be in existence,” Caldwell says.



Eleazer P. Kendrick

Posts Found and Sought

To date, the committee feels it has located five proven mile post sites, with the northeast corner of Indiana showing significant potential for recovery. Monuments from an 1871 section subdivision survey by George Mark, Hillsdale County, Mich., are currently being recovered and are expected to verify the location of the northeast corner of Indiana at mile 104-plus. Also, Owens reports, there is evidence of six of the eight witness trees Kendrick recorded at that point in 1827.

The possible remonumented site of mile post 86 was discovered in 2003 by Don Andrews, PS, of Sturgis, Mich.

While doing a property survey using tools much different than those used in Kendrick’s time—a Leica Geosystems (Norcross, Ga.) GPS 530 system for RTK measurements and a Leica TCA1100 robotic total station—he noted a slender, gray granite stone embedded between several other large stones. It was about 24 inches long and had a 12-inch-by-12-inch base, tapering to a chisel point about 10 inches wide.

He also located an 18-inch hickory tree at the same bearing and within four-tenths of a foot of a 7-inch diameter hickory that was originally witnessed in Kendrick’s survey. Following an evaluation by committee members in December 2006, they decided to define the position as “a possible location for mile post 86.”

“From what was found, surveyors should look for similar monumentation at other mile points,” Andrews says. “I do not believe that this post was the only mile point to be remonumented in this way.”

According to Owens, what appears to be the best-preserved monument recovered to date was found at mile 52, where Tom Stephenson, PS, of Cassopolis, Mich., located what he believes is an original mile post while verifying a closing corner position in January 2004. Stephenson told committee members he preserved the position with a three-quarter-inch pipe that was 6 feet long.

Though Stephenson used a Trimble (Sunnyvale, Calif.) 4700 base and 4800 rover for GPS measurements and a Topcon (Livermore, Calif.) 313 total station, perhaps his most essential piece of equipment was an Argo tracked, all-terrain, amphibious eight-wheel drive vehicle. This is because the well-preserved wood post, which had a pointed bottom tip, was recovered in knee-deep water in a 40-acre swamp, 600 feet or more from the nearest dry land, amid shrubs 10 to 12 feet tall.

Stephenson, who said an 1828 Michigan survey had tied into mile post 52, has no doubts that its preservation is due to the site’s remote location and the fact that the swamp has a high water table and is in a drainage area from a number of area lakes.

“Wet conditions are the best for preserving a post—and the wetter the bet-

In March 2005, Indiana and Michigan surveyors gathered at a point at Indiana's northeast corner where Kendrick placed a 6" by 6" white oak post in 1827.

ter," Owens says. "Submerged in water is almost a perfect condition."

Stephenson remembers the weather being snowy and "extremely cold" for the recovery in 2004. And ironically, the committee was hoping for similar conditions when it planned to reinvestigate the position early this year. Although a frozen surface would make it easier to reach the point, mild January temperatures stifled that plan.

Several other mile posts in the "maybe" category haven't been verified, and several stone markers appear to be perpetuations installed by local surveyors when the original posts were badly deteriorated. Committee members and local surveyors are still searching for records.

A Mission to Behold

County surveyors in Indiana and Michigan have included closing corners and adjoining monuments in their ongoing statewide remonumentation efforts. The committee anticipates that the recovery of additional survey monuments, along and adjacent to the line, will assist in closely defining the search area for an original mile post. As these search areas are determined, professional surveyors representing the two states will take part in a recovery effort.

Nothing comes easy, though. A meeting in October 2006 was to include a small group search for the monument at Indiana's northeast corner, but was delayed because access to the area is through a soybean field still in harvest. "As soon as the harvest is finished, we will get the northeast corner researched and explored in greater detail," Caldwell promised at the time.

Michigan's firearm hunting season followed the harvest, though, and the committee decided a further delay was advisable.

The group also expects to receive microfilm records relating to a geodetic control station in that area. "As people turn in new points, (the published 2005 committee report) becomes a living document," Caldwell says. There is currently a great deal of local effort toward this goal,



and the committee expects there will be a steady flow of what has been recorded, searched for, found and authenticated for the next several years. "It's a tremendous undertaking," he says.

The Surveyor's Role

At some point, when there is no more evidence of existent or obliterated mile posts to be added, the committee expects to turn over all that has been recovered, monumented and documented to legislatures in Michigan and Indiana. But only local professional surveyors can recover and monument "original" existent or obliterated evidence. Mile posts that are "lost" can only be replaced by joint action of the states' legislatures—or, as an alternative, by the U.S. Supreme Court.

"There's hope that the legislatures would clothe the committee to act on their behalf, with the authority to establish the mile posts," Caldwell says wishfully.

In the meantime, as local surveyors encounter problems and ask for help in getting a situation resolved, the committee is offering guidance, especially to those who are not familiar with junior and senior issues. (The Kendrick line, having been the first line established, is a senior line. Closing corners established by subsequent rectangular surveys of Indiana and Michigan are junior lines and must be subservient to the senior positions.)

A Surveyor's Motivation

While Owens said re-establishing the state line would primarily let each state know exactly where the line was, thereby establishing jurisdiction, Indiana and Michigan have never had the type of contentious boundary relationship that led to the so-called "Toledo War" between Michigan and Ohio in the 1830s. Owens calls the Indiana-Michigan line "The Quiet Boundary," and has written a paper about it with that title.

Meanwhile, committee members are enjoying the ongoing detective work. "The main thing that we're using is a plain old No. 2 shovel," Caldwell says. "Any surveyor will tell you that's the most important piece of equipment in their vehicle, period. Unless you dig and find that monument to do all those measurements on, they're all useless.

"This is what our profession is all about . . . finding, locating, preserving and authenticating monuments," he adds. "Surveyors love finding original markers in their daily activities." ☺

Mike Davis is an associate member of the Indiana Society of Professional Land Surveyors who serves on its Hoosier Surveyor magazine and website committees. He is nearing the completion of a construction technology degree at Indiana University-Purdue University Indianapolis and is a copy editor at The Indianapolis Star.

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